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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPELLANT'S APPEAL BRIEF TRANSMITTAL LETTER

APPLICANT:	Guenter WAITL, et al.	DOCKET NO:	P00,1086
SERIAL NO.:	09/581,585	ART UNIT:	2813
FILED:	October 5, 2000	EXAMINER:	L. Schillinger

TITLE: "SURFACE MOUNTING OPTOELECTRONIC COMPONENT AND METHOD FOR PRODUCING SAME"

Assistant Commissioner for Patents,
Washington, D.C. 20231

Sir:

Appellants are submitting herewith, in triplicate, Appellant's Main Brief on Appeal in support of the Notice of Appeal filed August 15, 2002. Also enclosed is a check for the $320.00 fee required by 37 C.F.R. §1.17(c). Please charge any additional fees which may be due and owing or credit any overpayment to Deposit Account No. 501519. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

Mark Bergner (Reg. No. 45,877)

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Mark Bergner
SCHIFF HARDIN & WAITE
Patent Department
6600 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6473
(312) 258-5779
Attorneys for Appellant
CUSTOMER NUMBER 26574

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Mark Bergner - Attorney for Appellants

#13

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPELLANT'S MAIN BRIEF ON APPEAL

APPLICANT:	Guenter WAITL, et al.	DOCKET NO:	P00,1086
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TITLE: "SURFACE MOUNTING OPTOELECTRONIC COMPONENT AND METHOD FOR PRODUCING SAME"

Assistant Commissioner for Patents,
Washington, D.C. 20231

Sir:

In accordance with the provisions of 37 C.F.R. §1.192, Appellant submits this Brief in support of the appeal of the above-referenced application, in triplicate, in support of the patentability of claims 21-37, 41 and 42 finally rejected in the Final Office Action (OA), dated May 21, 2002.

A copy of the claims on appeal is attached as Appendix A, and a copy of the Final Office Action is attached as Appendix B. A Notice of Appeal was mailed on August 15, 2002.

REAL PARTY IN INTEREST

The real party in interest in this appeal is the assignee, OSRAM Opto Semiconductors GMBH & Co. OHG, a German corporation.

RELATED APPEALS AND INTERFERENCES

There are no related appeals and no related interferences known to Appellant, Appellant's Assignee, or Appellant's legal representative.

STATUS OF CLAIMS

Claims 21-37, 41 and 42 are on appeal, and constitute all pending claims of the application that were not withdrawn by an election. These claims were rejected in the Final Office Action as follows:

Claims / Section	35 U.S.C. Sec.	References / Notes
21-34, 36, 41, 42	§102(e) Anticipation	• Mukerji, et al. (U.S. Patent No. 5,614,131).
35, 37	§103(a) Obviousness	• Mukerji, et al. (U.S. Patent No. 5,614,131).

STATUS OF AMENDMENTS

No amendments after final have been submitted by Appellants. The last amendment submitted was Amendment B, which has been acted on by the Examiner.

SUMMARY OF THE INVENTION

In general terms, the present invention is directed to a method for producing a surface mounting optoelectronic component that comprises readying a base body with the optoelectronic transmitter and/or receiver arranged in a recess of the base body, filling the recess of the base body with a transparent, curable casting compound, and placing the optical device onto the base body, where the optical device comes into contact with the casting compound. (Abstract)

Various surface mount optoelectronic components are known, including those comprising a housing having an optoelectronic transmitter/receiver that is placed within a transparent hardenable curing compound. The related art portion of the Specification details many such designs, but these designs either lack a lens or a similar optical device or do not provide such an optical device utilizing a lens or

similar optical device that is placed on an uncured transparent hardenable casting/curing compound. (1/11-2/15)

The present invention provides for an optoelectronic component with better performance that, at the same time, is inexpensive to manufacture. (2/16-20)

According to the invention, after producing a base body with the optoelectronic transmitter and/or receiver arranged in a recess, the recess of the base body is filled with a transparent hardenable casting compound, and the optical device is attached to the base body, this optical device being brought into contact with the casting compound in the region of the recess before the casting compound and/or the optical device (if this also comprises a casting compound) has completely hardened. (2/22-28)

An essential aspect of the present invention is that the optical device is placed on the base body only after the recess is poured with casting compound. Because the optical device is placed onto the recess when the latter is already filled with casting compound, the optical device can be positioned on the base body extremely precisely and reproducibly, and this positioning remains essentially unaffected by subsequent steps such as curing or removal from the mold. This guarantees a high optical quality of the optoelectronic component with respect to the emission behavior or reception behavior, which is very important for applications in which an exact beam guidance and a high light yield are desirable. The inventive optoelectronic components are thus superior to components in which the recess is filled from the reverse side given a previously mounted optical device. (3/1-11)

ISSUES

The issue on appeal is whether the subject matter of claims 21-34, 36, 41 and 42 are anticipated under 35 U.S.C. §102(e) by Mukerji, et al. (U.S. Patent No. 5,614,131).

Since the claims rejected under an obviousness standard are enveloped by claim groups dealing with rejection under a novelty standard, no separate arguments are provided relating to obviousness.

GROUPING OF CLAIMS

The claims on appeal include two independent claims (claims 21, and 28) and seventeen dependent claims (22-27, 29-37, 41 and 42). The claims are broken into five groups, with the claims in each respective group standing or falling together.

Group I claims are claims 21, 41 and 42, with the patentability of these claims standing or falling together with the patentability of independent claim 21. This grouping of claims is separately patentable from claims in the other groups.

Group II claims are claims 22 and 23, with the patentability of these claims standing or falling together with the patentability of dependent claim 22. This grouping of claims is separately patentable from claims in the other groups.

Group III claims are claims 24-26, with the patentability of these claims standing or falling together with the patentability of dependent claim 24. This grouping of claims is separately patentable from claims in the other groups.

Group IV contains the sole claim 27. This claim is separately patentable from claims in the other groups.

Group V claims are claims 28-37, with the patentability of these claims standing or falling together with the patentability of independent claim 28. This grouping of claims is separately patentable from claims in the other groups.

ARGUMENT

General Comments

Since all of the claims rejected under 35 U.S.C. 103 are grouped under claim 28, no separate obviousness section is provided under the arguments section.

Telephone Interview—Appellants conducted a telephone interview with the Examiner on July 18, 2002 in order to seek clarification as to how the Examiner was equating the elements of Mukerji with elements of the present invention, since the Appellants felt that such clarification had not been provided in previous office actions. No official record of this interview exists, and Appellants provide this summary of statements made during this interview so that they are of record and can be responded to in the Examiner's Answer. The Examiner, for the first time during the interview, clearly indicated how she was equating the elements.

The Examiner indicated during the interview that she was not considering anything in the preamble of the patent claim. This was problematic for the Appellants because the claim 21 preamble provides an important structural description that is necessary for making sense of the claims—namely that one element, an optoelectronic component has both: 1) an optoelectonic transmitter/receiver; and 2) an optical device. The Examiner did not accept that these two clearly defined and delineated elements were separate elements. Although these positions can be deduced from the statements made in the Office Actions, they were more clearly enunciated during the interview.

35 U.S.C. §102 ANTICIPATION BY MUKERJI, ET AL.

EXAMINER'S POSITION

Group I – Claims *21, 41 and 42

Examiner's Position: Mukerji teaches all of the method steps of claim 21 and that Mukerji clearly teaches that an optical device is placed into the resin, which is seen in Mukerji's Fig. 8. The base of the present claim 21 can be equated to Mukerji's reference character 10.

The Examiner indicates that all elements of independent claim 21 are found in the Mukerji reference. OA p. 2. In response to the Applicants' arguments, the Examiner indicated that the receiver/transmitter of Mukerji is equated to the optical device of the present invention and that an optical device being placed into resin is shown in Mukerji's Fig. 8. OA p. 3.

The Examiner indicates that the base of the present invention is equated to reference character 10 of Mukerji and that the open-ended language of the Applicants claim does not permit a distinction between these two elements.

Group II – Claims *22 and 23

Examiner's Position: Mukerji teaches mounting the optoelectronic transmitter/receiver on the portion of the conductor strip situated inside of the recess and shows a filling of the recess base body with a transparent curable casting compound.

The Examiner indicates that all elements of dependent claim 22 are found in the Mukerji reference. OA p. 3. The Examiner indicated that the Mukerji reference shows the optoelectronic transmitter/receiver being mounted on a portion of the conductor strip (Fig. 1, 26) situated inside the recess (Fig. 2) and shows the filling of the recess base body with a transparent curable casting compound (Fig. 3). OA p. 3.

Group III – Claims *24-26

Examiner's Position: Mukerji teaches that a fillet develops in the casting that is filling the recess due to surface tension wherein the optical device has a share in contact with the casting so that no casting runs over the edge.

The Examiner indicates that Fig. 3 of Mukerji teaches that a fillet develops in the casting that is filling the recess due to surface tension wherein the optical device has a share in contact with the casting so that no casting runs over the edge. OA p. 4.

Group IV – Claim 27

Examiner's Position: Mukerji teaches all of the elements of claim 27, including producing an optical device by one of casting, pressing, or injection processing.

The Examiner indicates that Mukerji teaches producing an optical device by one of casting, pressing, or injection processing at 3/5-30. OA p. 4.

Group V – Claims *28-37

Examiner's Position: Mukerji teaches all method steps of claim 28 of the present invention.

The Examiner indicates that Mukerji teaches a method comprising, in part, "Filling the recess of the prepared base body with a first transparent hardenable casting compound (Fig. [sic: Col.] 3, lines 10-35); Then readying a casting mold half and filling the mold half with a second transparent hardenable casting compound (col. 3, lines 10-20)."

APPELLANTS' POSITION

Appellants' Position (General): The Examiner is choosing inconsistent definitions for claim elements in the present invention when equating these elements to those disclosed by Mukerji and is ignoring the preamble portion of claims that distinguish various elements of the claims.

Group I – Claims *21, 41 and 42

The claims of Group I are separately patentable from other claim groups because they deal with placing the optical device onto the uncured casting compound and filling the base body with a transparent casting compound, which are elements not addressed in other claim groups.

Appellants' Position:

1) Mukerji does not teach or suggest placing an optical device onto the uncured casting compound and then curing the casting compound, according to claim 21.

As noted above, the Examiner indicated during the interview that the preamble of the patent claim was being ignored and that she was considering the present invention's optoelectronic transmitter/receiver and optical device as one and the same element, despite the fact that these two elements are clearly differentiated in the claim.

According to MPEP 2111.02:

> If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is "necessary to give life, meaning, and vitality" to the claim, then the claim preamble should be construed as if in the balance of the claim.... Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation.

The preamble of claim 21 reads:

> 21. A method for producing a surface mounting optoelectronic component having a base body, an optoelectronic transmitter/receiver that is arranged in a recess of the base body, and an optical device that covers the recess, said method comprising the steps of:

Thus, Appellants assert that the preamble *requires* the optoelectronic transmitter/receiver to be a separate entity from the optical device (based on the use of the word "and" in the preamble), and that this language is "necessary to give life, meaning, and vitality" to the claim. If, as the Examiner asserted, the preamble were to be ignored, then remaining elements of the claim body would lack antecedent basis and would require a 35 U.S.C. §112 rejection.

Claim 21 requires, in part, "preparing the base body with the optoelectronic transmitter/receiver arranged in the recess". The optoelectronic transmitter/receiver is exemplified in the inventive preferred embodiment by reference character 11 in Fig. 2. Claim 21 further requires, in part, "then placing the optical device onto the as yet uncured casting compound". The optical device is exemplified in the inventive preferred embodiment by reference character 16 in Fig. 2C.

The Examiner states in the Office Action at the bottom of p. 3, that Mukerji teaches placing the optical device onto the as yet uncured casting compound at 3/45-56. In the relevant sections of Mukerji cited by the Examiner, the cavity (recess) 16 of the component 10 is filled with a transparent hardenable casting compound 60, 62 (Figure 3), but then it is cured (3/56 – 4/10) before any optical device is placed on it. In fact, Appellants can find no reference to an optical device at all in the section cited by the Examiner. While the Examiner is free to interpret Mukerji's optical emitter/receiver (38, 39, Fig. 2, 8) as the present invention's "optical device" instead of the more logical "optoelectronic transmitter/receiver", the Examiner cannot ignore the element relating to the optoelectronic transmitter/receiver and must indicate which element of Mukerji is being equated to this element of the present invention so that Mukerji shows each and every element of claim 21. In the OA, the Examiner makes no statements as to how the elements

of Mukerji relate to the elements of claim 21, but rather just cites to various sections of Mukerji as teaching the claim elements.

The Examiner states in the OA, p. 3 (first paragraph), "Mukerji teaches forming an optical device by preplacing the emitter (transmitter)/receiver into the base and filling the base with an encapsulant, thus forming an optoelectronic device. Applicant argues that there is no optical device placed into the resin [sic] applicant is wrong and is referred to Fig. 8." This sentence is very unclear as it suggests that an "optical device" is both an assembly made of individual components, and is also one of the individual components itself.

Appellants believe that the transmitter and receiver of Mukerji cannot be equated to the optical device of the present invention since the present invention's optoelectronic component comprises both an optoelectronic transmitter/receiver *and* an optical device (thus distinguishing these two elements in the present invention).

2) Mukerji does not teach or suggest filling the recess of the prepared base body with a transparent hardenable casting compound, according to claim 21, but rather teaches the filling of a casting form.

In the First Office Action dated November 2, 2001, the Examiner stated at the bottom of p. 3, that Mukerji teaches filling the recess of the prepared base body with a transparent hardenable casting compound at 3/10-35 and Fig. 3. The Appellants respectfully disagree.

The Examiner appears to be equating Mukerji's base 10 and insert 14 with the present invention's base body as defined by independent claims 21 and 28. However, such a comparison is not proper in this case, since Mukerji's base 10 and insert 14, into which the cavity is made is not a part of the optoelectronic component (as is required by the present invention), but rather is a casting form that is part of a

manufacturing tool used to help produce the devices of Mukerji. The base 10 and insert 14 in Mukerji are separated away from the device in the steps between Figs. 4 and 5. According to Mukerji at 4/12-14, "Substrates 30 and 33 are pulled away from base 10 and insert 14 and thereafter release film 24 is pulled away from the substrates 30 and 33." Thus, the base 10 and 14 of Mukerji cannot be a part of the optoelectronic component, as required by the present invention.

The present invention's independent claims 21 and 28 state that the recess is prepared in the base body, which is a part of the optoelectronic component itself. Thus, Mukerji does not teach or suggest this step of the present invention.

The Examiner's response in the OA on p. 3 is that "Applicant's claim language is open ended and there is not suggestion that the base could not be removed in subsequently [sic: subsequent] processing, therefore applicant's [sic: applicants'] attempt to distinguish is considered unpersuasive." Appellants respectfully assert that this misses the point of the argument raised by them, i.e., that the thing that is removed in Mukerji is not a part of the optoelectronic component as is required by the claim language.

As Appellants noted in their last amendment, Mukerji does not even qualify as prior art under the obviousness standard because the use of Mukerji's cavity in the mold that is separated from the optoelectronic component itself suggests that there is no cavity/recess formed in the optoelectronic component at this stage, and, contrary to the present invention, this step in Mukerji results in a protrusion (the opposite of a recess) that is formed, and into which the optoelectronic transmitter/receiver is embedded.

Group II – Claims *22 and 23

The claims of Group II are separately patentable as they deal with structural aspects related to a conductor strip whose aspects are not addressed by the other claim groups.

Appellants' Position: Mukerji does not teach mounting the optoelectronic transmitter/receiver on a portion of the conductor strip situation inside the recess, but rather teaches a mounting directly on the substrate.

The Examiner indicated that the Mukerji reference shows the optoelectronic transmitter/receiver being mounted on a portion of the conductor strip (Fig. 1, 26) situated inside the recess (Fig. 2) and shows the filling of the recess base body with a transparent curable casting compound (Fig. 3). OA p. 3. Thus, the Examiner equates the conductor strip of the present invention (as exemplified by 2, 9, Fig 2A) to Mukerji's reflective layer 26. It is clear simply by reviewing the Figures referenced by the Examiner that the optoelectronic components 38 and 39 are expressly <u>not</u> mounted on the reflective layer 26—rather the components 38 and 39 are mounted directly on the substrate 30, 33.

Group III – Claims *24-26

The claims of Group III are separately patentable as they deal with structural aspects related to the specific shaping of the filling thorough surface tension whose aspects are not addressed by the other claim groups.

Appellants' Position: Mukerji does not teach that a fillet developing in the casting, but rather illustrates a flat surface being formed.

The Examiner indicates that Fig. 3 of Mukerji teaches that a fillet develops in the casting that is filling the recess due to surface tension wherein the optical device has a share in contact with the casting so that no casting runs over the edge. OA p.

4. Appellants' review of Mukerji Fig. 3 shows no fillet being formed, but rather shows a flat surface being formed.

Group IV – Claim 27

The claim of Group IV is separately patentable as it deals with structural aspects related to the specific formation of the optical device whose aspects are not addressed by the other claim groups.

Appellants' Position: Mukerji does not teach producing an optical device by one of casting, pressing, or injection.

The Examiner indicates that Mukerji teaches producing an optical device by one of casting, pressing, or injection processing at 3/5-30. OA p. 4. The Examiner appears to be confusing the optoelectronic component (the entire inventive component) of the present invention with the optical device (exemplified by (16) in Fig. 2C) of the present invention. As previously discussed, on p. 3, first paragraph of the OA, the Examiner states, "Applicant argues that the receiver/transmitter is not the optical device. Mukerji teaches forming an optical device by preplacing the emitter (transmitter)/reciver into the base and filling the base with an encapsulant, thus forming an optoelectronic device." The Examiner's reference to Fig. 8 only indicates the addition of reference character 80, which is defined as an "opaque polymeric body". Appellants respectfully assert that an opaque body could not be an "optical device" according to the present invention since it is opaque.

Furthermore, in the OA, at the bottom of p. 4, the Examiner refers to Mukerji at 3/5-30 as showing "prior to filling the recess, producing an optical device by one of casting, pressing, or injection processing." The only place "casting", "pressing", or "injection processing" is mentioned in Mukerji is in the "casting of the polymeric body 62" at 3/3/19-20). However, this polymeric body cannot be the optical device, as the

claim language indicates that the optical device is formed *prior to* filling the recess, and this interpretation of Mukerji would indicate a forming of an optical device *by* filling the recess. Thus, this interpretation would be inconsistent with how the claim elements are being defined for other claims.

Finally, the Examiner indicates, in the last 2 lines of p. 4, that Fig. 2 illustrates "then automatically picking a respective optical device from the bulk material (Fig. 2)". However, the Examiner's interpretation is sequentially incorrect. The use of the word "then" in claim 27 indicates necessary sequencing of the inventive element steps. However, the Examiner cites this later step of the present invention as occurring in *earlier* Fig. 2 step of Mukerji. This sequencing is temporally inconsistent.

Group V – Claims *28-37

The claims of Group V are separately patentable as they deal with method steps involving the use of molds whose aspects are not addressed by the other claim groups.

Appellants' Position: Mukerji does not teach filling the recess of the prepared base body with a first transparent hardenable casting compound and then readying a casting mold half and filling the mold half with a second transparent hardenable casting compound.

The Examiner indicates that Mukerji teaches a method comprising, in part, "Filling the recess of the prepared base body with a first transparent hardenable casting compound (Fig. [sic: Col.] 3, lines 10-35); Then readying a casting mold half and filling the mold half with a second transparent hardenable casting compound (col. 3, lines 10-20)."

Appellants respectfully assert that this portion of Mukerji does not provide any teaching distinguishing a first transparent hardenable casting compound from a

second transparent hardenable casting compound. The portions of Mukerji referred to in the specification are referenced around Fig. 3 of Mukerji. In this portion, only polymer 60 which is cast into a polymer body 62 is addressed... in other words, only one transparent hardenable casting compound is referred to. This is unlike the present invention which is exemplified by the first transparent hardenable casting compound of Fig. 2B, ref. char. 14 and the second transparent hardenable casting compound of Fig. 4, ref. char. 16. Furthermore, the Examiner offers no distinction with respect to the present invention requiring the first transparent hardenable casting compound filling a recess of the prepared base body and a second transparent hardenable casting compound filling a mold half with it.

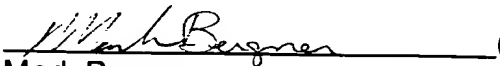
In summary, the Examiner has not met the requirements for showing that the Mukerji reference anticipates each and every element of the present invention as required under 35 U.S.C. §102—the Examiner has ignored parts of the claim preamble that are necessary to "give life, meaning, and vitality" to the claims, has ignored claim elements or has equated elements of Mukerji with elements of the present invention inconsistently. Appellants respectfully request that the Examiner's Answer *very clearly* spell out specifically how each and every element identified in the present invention's claims is being equated with each and every element of Mukerji and that the Examiner's Answer utilize a consistent definition of these elements when addressing the claims.

CONCLUSION:

For the above reasons, Appellants respectfully submits that the Examiner is in error in law and in fact in rejecting claims21-37, 41 and 42 based on the teachings of the above-discussed references. Reversal of the rejection of all of those claims is justified, and the same is respectfully requested.

This Brief is accompanied by a check in the amount of $320.00, as required by 37 C.F.R. §1.17(c). If necessary, the Commissioner is hereby authorized to charge any additional fees which may be required to account No. 50-1519.

Respectfully submitted,



(Reg. No. 45,877)

Mark Bergner
SCHIFF HARDIN & WAITE
Patent Department
6600 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6473
(312) 258-5779
Attorneys for Appellant
CUSTOMER NUMBER 26574

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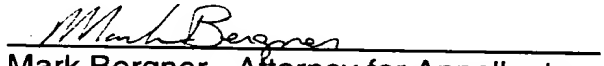

Mark Bergner - Attorney for Appellants

APPENDIX A
CLAIMS INVOLVED IN THE APPEAL

21. A method for producing a surface mounting optoelectronic component having a base body, an optoelectronic transmitter/receiver that is arranged in a recess of the base body, and an optical device that covers the recess, said method comprising the steps of:

preparing the base body with the optoelectronic transmitter/receiver arranged in the recess;

filling the recess of the prepared base body with a transparent hardenable casting compound;

then placing the optical device onto the as yet uncured casting compound; and

then curing the casting compound.

22. The method as claimed in claim 21, wherein the step of preparing the base body comprises the steps of:

coating a conductor strip with a thermoplast housing while

simultaneously forming the recess of the base body into a top surface of the thermoplast housing, a portion of said conductor strip being situated inside the recess;

mounting the optoelectronic transmitter/receiver on said portion of the conductor strip situated inside the recess; and

filling the recess of the base body with a transparent curable casting compound having thermal characteristics adapted to the thermoplast housing material.

23. The method as claimed in claim 21, wherein the recess of the base body is filled with the casting compound to a level such that, during the subsequent placement of the optical device, essentially no casting compound runs over an edge of the recess.

24. The method as claimed in claim 23, wherein the recess is filled with casting compound essentially to the edge of the recess such that, after the recess is

filled with casting compound, a fillet develops owing to the surface tension of the casting compound; and wherein the optical device has a shape in a region contacting the casting compound that no casting compound runs over the edge of the recess when the optical device is subsequently placed onto the casting compound.

25. The method as claimed in claim 21, wherein said optical device is placed from above, without pressure, onto one of the base body or at least one seating element attached to said base body within said recess.

26. The method as claimed in claim 21, wherein the casting compound is cured by the influence of heat.

27. The method as claimed in claim 21, further comprising the steps

prior to filling the recess, producing an optical device by one of casting, pressing, or injection processing;

then readying and transporting the optical device as bulk material of optical devices;

then automatically picking a respective optical device from the bulk material; and

then automatically positioning the picked optical device over the base body.

28. A method for producing a surface mounting optoelectronic component having a base body, an optoelectronic transmitter/receiver that is arranged in a recess of the base body, and an optical device that covers the recess, said method comprising the steps of:

preparing the base body with the optoelectronic transmitter/receiver arranged in the recess;

then filling the recess of the prepared base body with a first transparent hardenable casting compound;

then readying a casting mold half and filling the mold half with a second transparent hardenable casting compound;

then at least partially curing at least one of the first casting compound in the recess of the base body and the second casting compound in the mold half;

then casting the optical device onto the base body by joining the base body and the mold half properly positioned, such that second casting compound in the mold half comes into contact with a surface of the first casting compound in the recess of the base body;

then curing at least one of the second and first casting compound; and

then removing the mold half from the base body with the cast-on optical device.

29. The method as claimed in claim 28, further comprising the steps of:

prior to joining the base body and the mold half, wetting the surface of the first casting compound.

30. The method as claimed in claim 29, wherein the step of wetting the surface of the first casting compound comprises the steps of:

turning the base body about a horizontal axis such that an opening of the recess is directed downwardly; and

at least superficially immersing the base body in liquid casting compound.

31. The method as claimed in claim 28, wherein the at least partial curing of the first casting compound is by heat treatment.

32. The method as claimed in claim 28, wherein the at least partial curing of the second casting compound is by heat treatment.

33. The method as claimed in claim 28, further comprising the steps

leading a number of base bodies on a first strip; and leading a number of mold halves on a second strip, wherein the first strip and the second strip are led in parallel at least

during the step of casting the optical device onto the base body.

34. The method as claimed in claim 28, further comprising the steps of:

leading a number of base bodies on a first strip; combining a number of mold halves in a group; and

connecting the group of mold halves, such that they can be detached, to a corresponding number of base bodies at least during the step of casting the optical device onto the base body.

35. The method as claimed in claim 28, wherein the base body and the mold half are joined at a temperature of approximately 80°C.

36. The method as claimed in claim 28, wherein the second casting compound is cured at a temperature of approximately 150°C.

37. The method as claimed in claim 28, wherein the mold half is removed from the base body at a temperature of approximately 80°C.

41. The method according to claim 21, further comprising:

bringing the optical device in contact with the casting compound in a region of the recess prior to curing the casting compound.

42. The method according to claim 21, wherein the optoelectronic component is configured as a surface-mount technology component.

APPENDIX B
FINAL OFFICE ACTION

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,585	10/05/2000	Gonter Waitl	P00,1086	1075

7590 05/21/2002

Schiff Hardin & Waite
6600 Sears Tower
Chicago, IL 60606

EXAMINER
SCHILLINGER, LAURA M

ART UNIT	PAPER NUMBER
2813	

DATE MAILED: 05/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/581,585	Applicant(s) WAITL ET AL.
	Examiner Laura M Schillinger	Art Unit 2813

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2002*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-37,41 and 42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-37,41 and 42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 21-34 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Mukerji et al.

In reference to claim 21, Mukerji teaches a method comprising:

Preparing the base body with the optoelectronic transmitter/receiver arranged in the recess Col.1, lines: 10-15 and Col.2, lines: 10-25);

Filling the recess of the prepared base body with a transparent hardenable casting compound (Col.3, lines: 10-35 and (Fig.3 (62));

Then placing the optical device onto the as yet uncured casting compound (Col.3, lines: 45-56); and

Then curing the casting compound (Col.3-4, lines: 56-10).

Response to Arguments

Applicant's arguments filed 1/28/02 have been fully considered but they are not persuasive. Applicant argues that his optoelectronic device is different from Mukerji 's optoelectronic device. Applicant argues that the receiver/transmitter is not the optical device. Mukerji teaches forming an optical device by preplacing the emitter (transmitter)/receiver into the base and filling the base with an encapsulant, thus forming an optoelectronic device. Applicant argues that there is no optical device placed into the resin applicant is wrong and is referred to Fig.8.

Applicant next argues that the base cannot be 10 because the base is later removed. Applicant's claim language is open ended and there is no suggestion that the base could not be removed in subsequently processing, therefore applicant's attempt to distinguish is considered unpersuasive.

In reference to claim 22. Mukerji teaches wherein the step of preparing the base body comprises the steps of :

Coating a conductor strip (Fig. 1 (26)) with a thermoplast housing while simultaneously forming the recess of the base body into a top surface of the thermoplast housing (Fig. 1 (24 or 10), a portion of the conductor strip being situated inside the recess (Fig.1 (26)) ;

Mounting the optoelectronic transmitter/receiver on the portion of the conductor strip situated inside the recess (Fig.2 (38 and 39)); and

Filling the recess of the base body with a transparent curable casting compound having thermal characteristics adapted to the thermoplast housing material (Fig.3).

In reference to claim 23, Mukerji teaches wherein the recess of the base is filled with the casting to a level that when the device is placed, no casting runs over the edge of the recess (Fig.3 (62)).

In reference to claim 24, Mukerji teaches wherein the recess is filled with casting to the edge such that, afterwards a fillet develops due to surface tension and wherein the optical device has a share in contact with the casting so that no casting runs over the edge (Fig.3).

In reference to claim 25, Mukerji teaches wherein the optical device is placed above the base or at least one seating element attached to the base (Fig.2 (38 and 39 as compared to 24 and 10)).

In reference to claim 26, Mukerji teaches wherein casting is cured (Fig.4).

In reference to claim 27, Mukerji teaches further comprising:

Prior to filling the recess, producing an optical device by one of casting pressing, or injection processing (Col.3 lines: 5-30);

Then readying and transporting the optical device by one of casting, pressing, or injection processing (Col.3, lines: 5-30);

Then automatically picking a respective optical device from the bulk material (Fig.2); and

Then automatically positioning the picked optical device over the base body (Fig.2).

In reference to claim 28, Mukerji teaches a method comprising:

Preparing the base body with the optoelectronic transmitter/receiver arranged in the recess (Fig.2);

Filling the recess of the prepared base body with a first transparent hardenable casting compound (Fig.3, lines: 10-35);

Then readying a casting mold half and filling the mold half with a second transparent hardenable casting compound (col.3, lines: 10-20);

Then at least partially curing at least one of the first casting compound in the recess of the base body and the second casting compound in the mold half (Fig.5 (62) and Col.3, lines: 10-35);

Then casting the optical device onto the base body by joining the base body and the mold half properly positioned, such that second casting compound in the mold half comes into contact with a surface of the first casting compound in the recess of the base body (Fig. 7);

Then curing at least one of the second and first casting compound (Col.3-4, lines: 56-10); and

Then removing the mold half from the base body with the cast-on optical device (Col.4, lines: 10-25).

In reference to claim 29, Mukerji teaches prior to joining the base body and the mold half, wetting the surface of the first casting compound (Col.3, lines: 10-30).

In reference to claim 30, Mukerji teaches wherein:

Turning the base body about a horizontal axis such that an opening of the recess is directed downwardly (Fig.2); and

At least superficially immersing the base body in liquid casting compoundCol.3, lines: 10-35).

In reference to claim 31, Mukerji teaches wherein the at least partial curing of the first casting compound is by heat treatment (Col.3-4, lines: 55-10).

In reference to claim 32, Mukerji teaches wherein the at least partial curing of the second casting compound is by heat treatment (Col.3-4, lines: 55-10).

In reference to claim 33, Mukerji teaches further comprising:

leading a number of base bodies on a first strip (Fig.3); and

leading a number of mold halves on a second strip (Fig.5),

wherein the first strip and the second strip are led in parallel at least during the step of casting the optical device onto the base body (Fig.3 +Fig.5).

In reference to claim 34, Mukerji teaches further comprising:

Leading a number of base bodies on a first strip (Fig.3);

Combining a number of mold haves such that they can be detached, to a corresponding number of base bodies at least during the step of casting the optical device onto the base body (Col.4, lines: 10-35).

In reference to claim 36, Mukerji teaches wherein the second casting compound is cured at a temp of 150 degrees (Col.4, lines: 1-10).

In reference to claim 41, further comprising bringing the optical device in contact with the casting compound in a recessed region prior to curing the compound (Fig.3 (38, 39)).

In reference to claim 42, wherein the optoelectronic component is SMT (Fig.8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukerji et al ('131).

In reference to claims 35 and 37, Mukerji et al ('131) fails to explicitly teach wherein the base body and the hold half are attached and removed at a temp of appx. 80 degrees. However, these claims are prima facie obvious without showing that the claimed ranges achieve unexpected results relative to the prior art range. In re Woodruff, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990). See also In re Huang, 40 USPQ2d 1685, 1688(Fed. Cir. 1996)(claimed ranges of a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art). See also In re Boesch, 205 USPQ 215 (CCPA) (discovery of optimum value of result effective variable in known process is ordinarily within skill of art) and In re Aller, 105 USPQ 233 (CCPA 1955) (selection of optimum ranges within prior art general conditions is obvious).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Norton ('398) and Takano et al ('500) teach similar methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M Schillinger whose telephone number is (703) 308-6425. The examiner can normally be reached on M-F 7:00 -4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Bowers can be reached on (703) 308-2417. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1500.

LMS
May 16, 2002

OLIK CHAUDHURI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

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If the contents of the attached correspondence have any clerical omissions, e.g., missing references or pages, illegible text, or any other similar errors, please contact us at the number below. We will take appropriate action to expedite the necessary corrections. Also, if you have general questions concerning any application assigned to Technology Center 2800, please contact our Customer Service Center. Questions concerning the merits of the application must be directed to the Examiner in charge of the particular application, then to the supervisor if appropriate.

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